

REMARKS

Priority

The Examiner acknowledged Applicant's claim for foreign priority based on UK Application 9827827 filed December 17, 1998, but asserted that a certified copy has not been received. Applicant's UK counsel has informed the undersigned attorney that a certified copy of priority application GB 9827827 was filed during the international phase. The European Patent Office on-line file includes a copy of this priority application as received from the International Bureau; the EPO file further shows that the EPO had to make a specific request to the International Bureau for such a copy, having initially only received from the International Bureau a copy of the other priority UK Application GB 992723.3. It would thus appear that the International Bureau failed to send both priority applications to the designated offices, even though both were properly filed by Applicant during the international phase.

A copy of GB 9827827, obtained from the European Patent Office file, is attached.

If the U.S. Patent Office would like Applicant to obtain a new certified copy of GB 9827827, please telephone the undersigned attorney with such request or otherwise put the request in writing.

Drawings

The Examiner noted that Fig. 7, although described in the specification on page 7, was not included with the application.

Applicant submits herewith a new Fig. 7. Fig. 7 is fully supported on page 7 of the specification, which describes the structure of the seventh embodiment being similar to the

device shown in Fig. 3, but with the additional layers 24 and 26. Thus, no new matter has been added.

The Examiner also objected to the lack of a description of the reference number 22 found in Fig. 6.

Applicant has amended the specification at page 6, second to the last line, to include the reference number 22 for the sputtered layer of aluminum, as is clear from the text on page 6. Thus, no new matter has been added.

Thus, Applicant respectfully requests that the Examiner withdraw the objections to the drawings.

§ 112 Rejection

Claim 11 was rejected under § 112 as being indefinite for including both a broad range and a narrower limitation.

Applicant has amended claim 11 to delete the narrower limitation. Applicant has added new claim 33 to set forth the narrower limitation.

Thus, Applicant respectfully requests withdrawal of the rejection to claim 11.

Claim 5 was also objected to under § 112. However, claim 5 has been canceled.

Patentability Rejections

All the claims were rejected as anticipated by U.S. Patent 5,686,360 to Harvey III, or as obvious over Harvey taken alone or in combination with U.S. Patent 5,776,622 to Hung.

Applicant has canceled claims 1-9, 13-15 and 23-31; claim 32 was previously canceled. The remaining claims are 10-12, 16-22 and 33. Claim 10 is the sole independent claim.

Claim 10 has been amended to specify that the gettering layer, such as layer 18 in Fig. 4, is adjacent the outermost electrode layer, e.g., layer 14 in Fig. 4.

The primary reference Harvey III, fails to teach or suggest the subject matter of claim 10. Harvey describes an array 12 of pixels of organic light emitting devices (LEDs) positioned on substrate 11. A mulilayer overcoating 16 is positioned between plastic substrate layer 11 and array 12, in order to protect the array 12 from the permeation of oxygen and water vapor which is inherent to plastic (column 4, lines 23-24).

Harvey III further describes how array 12 is overcoated with a hermetic sealing system 22 comprised of a buffer system designed to generally match at least some of the characteristics of array 12 to an encapsulating system. Column 5 at lines 24-28. In the embodiments shown in Figs. 4-5, the sealing system 22 includes a buffer layer 24 adjacent to outermost cathode layer 15 of array 12. The buffer layer 24 may be either an organic polymer or an organo-metallic complex and provides a low coefficient of thermal expansion, close to the coefficient of thermal expansion of the array 12 so that there is little or not stress created during thermal cycling. Column 5 at lines 30-38. The polymers used in buffer layer 24 may also have low dielectric constants and low permeability to oxygen and moisture. Column 5 at lines 38-41.

In these embodiments of Figs. 4-5, above the buffer layer 24 there is provided a covering or coating of a thermal coefficient matching layer 26, which is a second layer in the

buffer system. Column 5 at lines 53-55. Next there is deposited over layer 26 a low permeability inorganic layer 28. Column 5 at lines 55-58.

In a somewhat different embodiment, a low work function metal, such as lithium or magnesium, is utilized as the thermal coefficient matching layer 26 and further acts as a gettering material to absorb some trapped gases and the like within the inorganic layer. Column 5 at lines 61-65. This is the embodiment on which the Examiner relies in the office action.

However, there is no description in Harvey III of providing, as is recited in claim 10, a gettering layer adjacent the outmost electrode layer. Rather, Harvey III teaches the use of buffer layer 24 providing a close match of thermal expansion coefficient.

Nor do the other embodiments of Harvey III teach or suggest the subject matter of claim 10. In column 6, Harvey describes a second embodiment shown in Figs. 6-7, in which a metal can 32 encapsulates the organic LED. This does not teach or suggest the subject matter of Applicant's claim 10.

Harvey III further suggests third and fourth embodiments in column 6, and shown in Figs. 8-11. Here, the individual pixels which make up array 12 are first capped or overcoated with a layer of stable metal 54 such as indium, to provide an initial protective coating for the individual pixels. Column 6 at lines 42-47. Then, an overcoating is applied similar to that described in Figs. 4-5, wherein a first buffering layer 56 is deposited on array 12, followed by a thermal coefficient matching layer 58, which is overcoated by a low permeability inorganic layer 60, and then a final sealing layer of epoxy 42 or polymer laminated metal foil 52. Column 6 at lines 48-58. None of these embodiments, teach or suggest the subject matter of Applicant's claim 10.

Thus, there is no example or suggestion in Harvey III to do away completely with the buffer layer and provide the gettering layer directly adjacent the electrode.

Nor does the secondary reference Hung cure the deficiencies of the primary reference. Hung was said to teach a multilayered cathode in an organic electroluminescent device having a first low work function conductive layer of calcium having a thickness of 200 nm or less, on the light-emitting layer, and a second conductive layer of aluminum having a thickness of 5 micron or less. This multilayer cathode is said to provide stability against atmospheric corrosion.

Hung fails to cure the deficiencies of Harvey III. Hung does not describe a gettering material adjacent the outermost electrode. Hung was cited in combination with Harvey III against dependent claims 21-22 which recite more specifically the layers of the first and second electrodes, as opposed to the "at least one gettering layer" recited in claim 10. Thus, the combination of Harvey III and Hung does not teach or suggest the subject matter of amended claim 10.

The remaining claims patentably distinguish over the cited references, for at least the reasons that independent claim 10 is patentable.

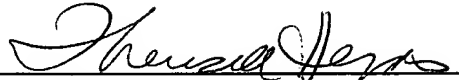
In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

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